

Claims

What is claimed is:

1. A method for storing and accessing an application database, the method comprising:
 - 5 in a signaling message routing node having a distributed internal processing architecture:
 - (a) dividing a database associated with a single telecommunications application into a plurality of different database segments;
 - (b) storing the database segments on a plurality of different processing
10 modules;
 - (c) receiving a signaling message at a link interface module;
 - (d) identifying a segment of the database associated with the telecommunications application for processing the signaling message; and
 - 15 (e) forwarding the signaling message to the processing module containing the segment of the database for processing the signaling message.
2. The method of claim 1 wherein dividing a database includes dividing a number portability database.
- 20 3. The method of claim 2 wherein dividing a number portability database includes dividing the number portability database based geographic locations of ported subscribers.

4. The method of claim 1 wherein dividing a database includes dividing a global title translation database.
5. The method of claim 4 wherein dividing a global title translation database includes dividing the global title translation database based on ranges of subscriber identifiers.
6. The method of claim 1 wherein dividing a database includes dividing an IP telephony subscriber location database.
7. The method of claim 6 wherein dividing an IP telephony subscriber location database includes dividing the IP telephony subscriber location database based IP telephony subscriber identifiers.
8. The method of claim 1 wherein dividing a database includes dividing the database based on network service provider identifiers.
9. The method of claim 1 wherein dividing a database includes dividing an equipment identity register (EIR) database.
10. The method of claim 1 wherein receiving and forwarding a signaling message includes receiving and forwarding an SS7 signaling message.
11. The method of claim 1 wherein receiving and forwarding a signaling message includes receiving and forwarding an IP telephony signaling message.
12. A method for processing signaling messages, the method comprising:
in a signaling message routing node having a distributed internal processing architecture:

- (a) receiving a signaling message that requires processing by a telephony application;
 - (b) selecting a processing module from a plurality of processing modules that contains a segment of data associated with the telephony application, wherein each processing module includes a different segment of data from a database associated with the telephony application; and
 - (c) forwarding the message to the selected processing module.
13. The method of claim 12 wherein receiving a signaling message includes receiving an SS7 signaling message.
14. The method of claim 12 wherein receiving a signaling message includes receiving an IP telephony signaling message.
15. The method of claim 12 wherein the telephony application comprises a number portability translation application.
16. The method of claim 15 wherein selecting a processing module comprises selecting a processing module containing the segment of number portability translation data for processing the signaling message.
17. The method of claim 16 wherein the number portability translation data is divided among the segments according to geographic locations of ported subscribers.
18. The method of claim 12 wherein the telephony application comprises a global title translation application.

19. The method of claim 18 wherein selecting a processing module comprises selecting a processing module containing the segment of global title translation data for processing the signaling message.
20. The method of claim 12 wherein the telephony application comprises an
5 equipment identity register (EIR) application.
21. The method of claim 20 wherein selecting a processing module comprises selecting a processing module containing the segment of EIR data for processing the signaling message
22. A signaling message routing node including a distributed internal
10 processing architecture for processing signaling messages, the signaling message routing node comprising:
 - (a) a link interface module for sending and receiving signaling messages to and from external signaling links, at least some of the signaling messages requiring LNP translation service;
 - 15 (b) a plurality of processing modules operatively associated with the link interface module for storing different portions of number portability translation data for performing number portability translations for received signaling messages; and
 - (c) a service selection function operatively associated with the link
20 interface module and the processing modules for selecting a processing module from the plurality of processing modules for processing each signaling message requiring number portability

translation service and for forwarding the signaling messages to the selected processing modules.

23. The signaling message routing node of claim 22 wherein the link interface module comprises an SS7 link interface module.
- 5 24. The signaling message routing node of claim 22 wherein the link interface module comprises an IP link interface module.
25. The signaling message routing node of claim 22 wherein the service selection function is located on the link interface module.
26. The signaling message routing node of claim 22 wherein the service
10 selection function is located on a first processing module of the plurality of processing modules, wherein the link interface module is adapted to forward the signaling messages requiring number portability translation service to the first processing module and wherein the service selection function is adapted to forward each signaling message to the processing
15 module containing the set of number portability processing data for processing that signaling message.
27. The signaling message routing node of claim 22 comprising a service selection module separate from the link interface module and the processing modules, wherein the service selection function is located on
20 the service selection module.
28. The signaling message routing node of claim 22 wherein number portability translation data is divided among the processing modules based on geographic locations of ported subscribers.

29. The signaling message routing node of claim 22 wherein the number portability translation data includes local number portability translation data.
30. The signaling message routing node of claim 22 wherein the number portability translation data includes mobile number portability translation data.
31. The signaling message routing node of claim 22 wherein the number portability translation data includes local and mobile number portability translation data.